



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
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OFFICE OF  
ENVIRONMENTAL CLEANUP

March 11, 2009

David Lacey  
Oregon Department of Environmental Quality  
Northwest Region  
2020 S.W. 4<sup>th</sup> Avenue  
Portland, Oregon, 97201

Re: Evaluation of Initial Deep Gravel Zone Extended Pump Test Plan (January 19, 2009)

Dear Mr. Lacey:

EPA has reviewed the above referenced document for the Rhone Poulenc (RP) site in Portland, Oregon. Overall the document seems well written and comprehensive. However, based on the information provided in this document, EPA provides the following comments for DEQ to consider in proceeding forward with its decisions regarding upland source control at this site.

1. Since the duration of the pump test is unknown, EPA requests there be some commitment by SLLI to produce periodic summaries of the results of the pump test that are sent to the agencies during the period of the pump test. These summaries should be more frequent at the beginning of the test and drop in frequency as the test period develops and the data stabilizes. In addition, EPA expects that all the data and analysis would be presented in a final report once the pump test is completed.
2. The pump test seems to balance the need for aquifer data with the desire to contain the plume of dissolved contaminants presently moving towards the Willamette River with a desire not to mobilize the high concentrations at the Rhone-Poulenc source areas upgradient from the extraction wells. Given this stated set of objectives for the facility, it should be noted that most of those issues are not as much a concern for EPA as is the need to stop the migration of the dissolved contaminants past the extraction well locations. EPA expects the outcome of the hydraulic and water quality data from the pump test to alleviate EPA's concern.
3. One major issue EPA has with the proposed pumping test, which is not fully discussed in this plan, is the basalt contact below the deep gravel; a zone which is apparently not fully characterized to this date. That zone includes the contact with the basalt, which is not a distinct zone but a combined zone of the deep gravel and the basalt rubble/fractured upper basalt surfaces. The combination of these zones have the potential to be a combined thicker zone of high hydraulic conductivity than the present plan documents and may not be fully accounted in the modeling and placement of wells proposed for pumping and monitoring. EPA was informed recently that at least in one area in the basalt rubble (or fractured upper zone) a recent well documented that zone to be about 50

feet thick. Up to now we have been under the impression that the zone was more likely to be about five (5) to ten (10) feet thick. If the recent data is correct, there will be a need to fully document that these proposed pumping and monitoring wells are fully capturing and monitoring the ground water at the location of the extraction wells.

4. On a related issue to the basalt contact discussed above, EPA considers it is necessary to carefully document the conceptual site model (CSM) for DNAPL at this facility. As indicated in earlier reports, the current CSM presented by SLLI is that the site DNAPL at the source area is contained by the basalt surface. If the basalt surface is more of a basalt rubble surface that varies in thickness, as new information seems to indicate, there may be a need to more fully characterize the location and flow paths for DNAPL at this site. EPA is concerned that the conceptual model of the DNAPL being above the basalt is not correct and that DNAPL and the related dissolved contaminants may be moving towards the Willamette River through the basalt rubble or the deep gravels below the monitoring wells. EPA requests further characterization of the deep gravel zone/basalt rubble surface to fully understand the source of contaminants from this facility to the Willamette River.
5. The layout of monitoring wells presented in the report seems reasonable, with the exception of the area of the Arkema Facility Lot 1. In that area there is a lack of monitoring wells generally east of MW-11 which will make it hard to define capture in that area. EPA suggests installing wells in that area as soon as practicable to obtain capture data during the pump test, although we do not expect delaying commencement of the pump test until wells are installed there.
6. The pump test summaries and final report (see comment #1) submitted to the agencies should include pumping rates in each well as well as the system pumping rate, water levels in the extraction wells (or preferably monitoring wells adjacent to the extraction wells), water quality in the monitoring wells, and time series water quality data for all the monitoring wells (at least for key contaminants in the source area). The data should be presented in tables and in graphs for ease of review and interpretation. EPA understands that some of these requests may be included in previous documents, but requests this information be presented together as a single necessary data set for ease of review.
7. The plan does not mention the use of the Capture Zone Analysis method developed by EPA. EPA strongly suggests that this method either be incorporated into a final or revised Plan and/or required to be used in ODEQ's approval letter of the Plan. The reference for this method is EPA/600/R-08/003 January 2008, *A Systematic Approach for Evaluation of Capture Zones at Pump and Treat Systems*, and the link to it is found at <http://www.epa.gov/ada/pubs/reports/600R08003.html>.
8. Figures H-8 to H-26 present graphs which have much valuable data, but they also show a significant level of apparent "noise" or other disturbances on the graphs. EPA requests that this apparent noise be discussed in a revised Plan, or if not revised, in the documents produced during the long-term pump test, and in the final data report for the pump test.

If you have any questions or would like to discuss the contents of this letter further, please contact me at (206) 553-6705, or by email at [koch.kristine@epa.gov](mailto:koch.kristine@epa.gov).

Sincerely,

Kristine Koch, Remedial Project Manager  
Portland Harbor Superfund Site  
Office of Environmental Cleanup

cc: Mr. Matt McClincy  
ODEQ

Mr. Rene Fuentes  
USEPA